Before mounting an antenna, see ***Safety Information***. For complete safety, regulatory, and other product marking information, see the user manual for your ETS-Lindgren antenna.

Safety Information

ONLY QUALIFIED PERSONNEL should install, operate, or service this equipment.

CONTACT ETS-LINDGREN PRIOR TO SERVICING. Servicing (or modifying) the unit by yourself may void your warranty. If you attempt to service the unit by yourself, disconnect all electrical power before starting.
There are voltages at many points in the instrument that could, if contacted, cause personal injury.
Only trained service personnel should perform adjustments and/or service procedures upon this instrument.
Capacitors inside this instrument may still be CHARGED even when instrument is disconnected from its power source.

Warranty Information

For complete warranty information, see the user manual for your ETS-Lindgren antenna.

This guide describes the hardware required to mount your ETS-Lindgren antenna to a tripod, mast, or boom, and is intended to be used in conjunction with the antenna user manual. This guide does not replace the antenna user manual.

These antennas and mount destinations are included:

Antenna Type

BiConiLog™ Antennas – 3140B, 3149, 3142C, 3142D, 3142E, 3143B
Biconical Antennas – 3109, 3104C, 3110B, 3110C
Mini-Bicon Antennas – 3180, 3180B, 3181, 3182, 3183, 3184
Log Periodic Antennas – 3144, 3147, 3148, 3148B, 3186
Double-Ridged Waveguide Horns – 3106B, 3115, 3116, 3116B, 3116C, 3117, 3119
3164 Series Horns
– Quad-Ridged Horns (–05, –06, –07, –08, –10, –11)
– Dual-Polarized Horns (–03, –04)
Pyramidal Horn Antennas – 3160 Series, 3161 Series
Dipoles – 3121C, 3121D
Loop Antennas and Rod Antennas – loop antennas, rod antennas
Conical Log Spirals – 3101, 3102, 3103
High Gain Conical Horns – 3163 Series (–03, –04, –05, –06)

Mount Destination

- ***Model 4-TR Tripod –*** ETS-Lindgren 4-TR tripod
- ***Model 7-TR Tripod Positioner –*** includes 109042, 108983, 118947, and 108507 booms:
  - ***109042 –*** straight; for general antenna mounting on a 7-TR
  - ***108983 –*** offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947 –*** for stinger-type antennas only
  - ***108507 –*** for the 3106 and 3106B only
- ***Mast –*** 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom –*** typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

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Cedar Park, TX 78613
Phone: +1.512.531.6400
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Please see **www.ets-lindgren.com** for a list of all ETS-Lindgren offices.

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399807, Rev G

Revision/Date: A, Initial Release–June, 2008 | B, Updates–February, 2009 | C, Added mini-bicons, 3301C–November, 2009 | D, Updated 3149 mounting, added 3163–March, 2010 | E, Added 3116B, 3119, 3164-10–November, 2010 | F, Added 3106B mounting info–July, 2013 | G, Added 118947, 3116C, 3142E, 3143B, 3164-11, 3180B, 3186–November, 2013

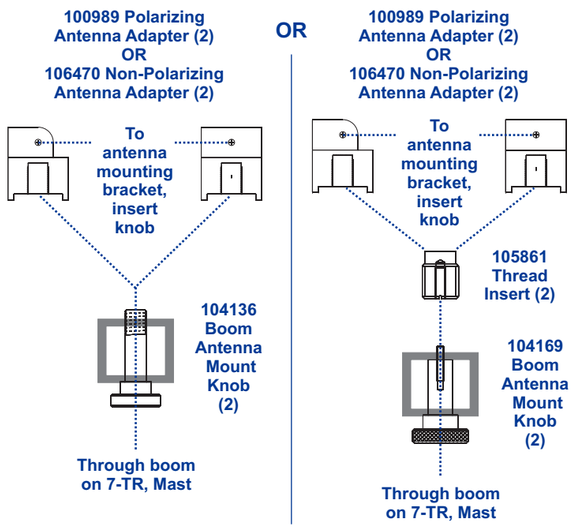
BiConiLog™ Antennas

3140B

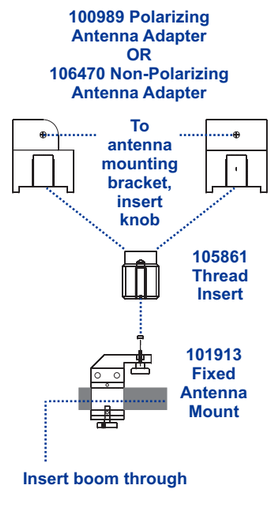
4-TR

Do not mount to a 4-TR.

7-TR, Mast


100989 Polarizing Antenna Adapter (2) OR 106470 Non-Polarizing Antenna Adapter (2)
To antenna mounting bracket, insert knob
104136 Boom Antenna Mount Knob (2)
Through boom on 7-TR, Mast
OR
100989 Polarizing Antenna Adapter (2) OR 106470 Non-Polarizing Antenna Adapter (2)
To antenna mounting bracket, insert knob
105861 Thread Insert (2)
104169 Boom Antenna Mount Knob (2)
Through boom on 7-TR, Mast

2x2 Boom


100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
105861 Thread Insert
101913 Fixed Antenna Mount
Insert boom through

Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

Antennas shown here ship with these standard parts:

- 105861 Thread Insert (3140B ships with two)
- 100989 Polarizing Antenna Adapter (3140B ships with two)
- Antennas include mounting bracket (attached) and mounting knob(s)

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

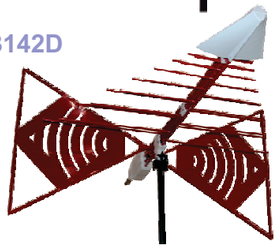
BiConiLog™ Antennas, continued

3149, 3142D/C/E, 3143B

3149

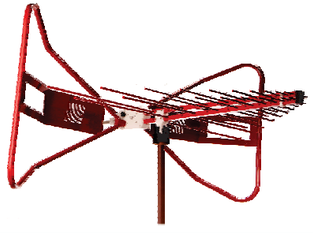
3142E

3142D

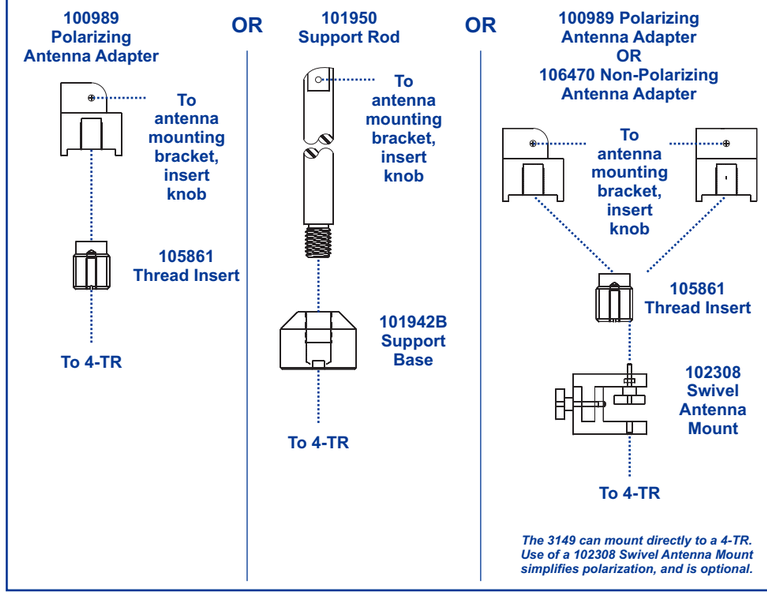


3142C

3143B

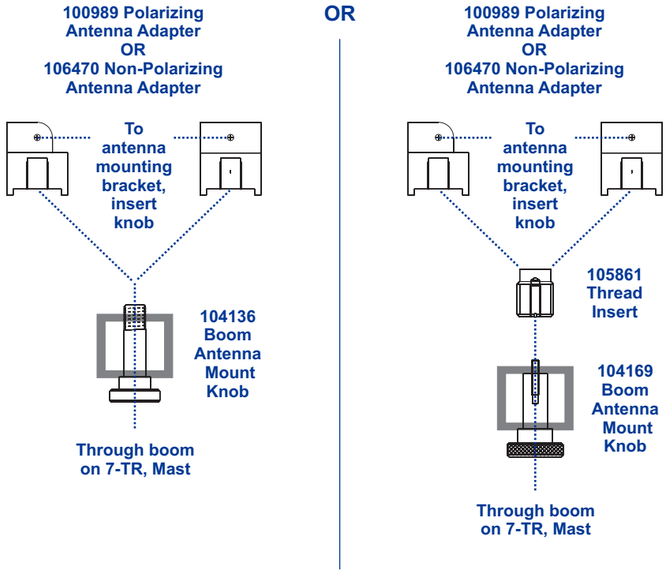


4-TR

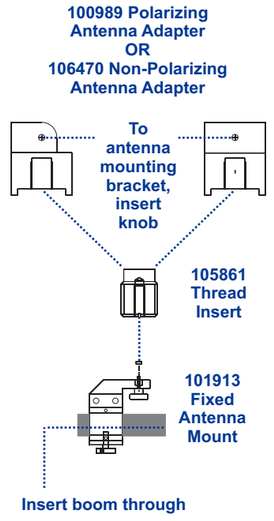


The 3149 can mount directly to a 4-TR. Use of a 102308 Swivel Antenna Mount simplifies polarization, and is optional.

7-TR, Mast



2x2 Boom



Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

Antennas shown here ship with these standard parts:

- 105861 Thread Insert (3140B ships with two)
- 100989 Polarizing Antenna Adapter (3140B ships with two)
- Antennas include mounting bracket (attached) and mounting knob(s)

Notes

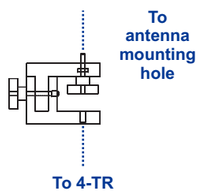
- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

Biconical Antennas

3109

4-TR

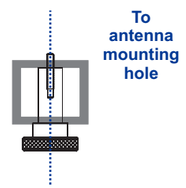
102308
Swivel Antenna Mount



Can mount directly to a 4-TR. Use of a 102308 Swivel Antenna Mount simplifies polarization, and is optional.

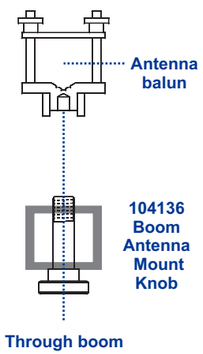
7-TR, Mast

104169 Boom Antenna Mount Knob



2x2 Boom

106102 Universal Antenna Mount



Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

3110C, 3110B, and 3104C antennas ship with these standard parts:

- 100733 Support Rod
- 101942B Support Base
- 102108 Clamp Block

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

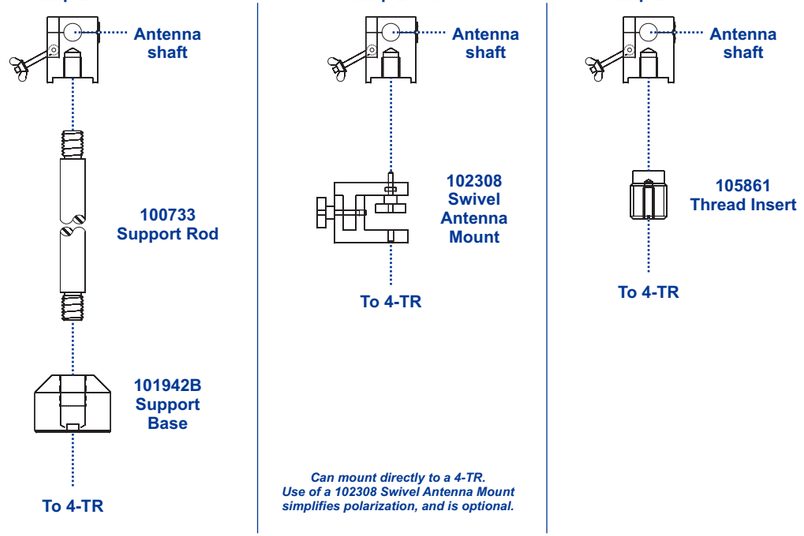
3110C, 3110B, 3104C

3110C

3110B

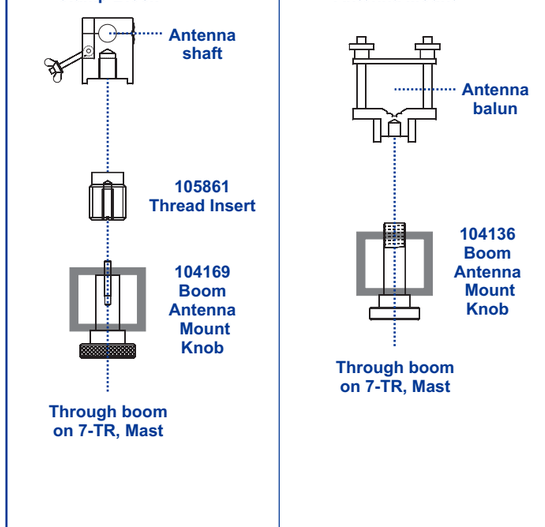
3104C

4-TR

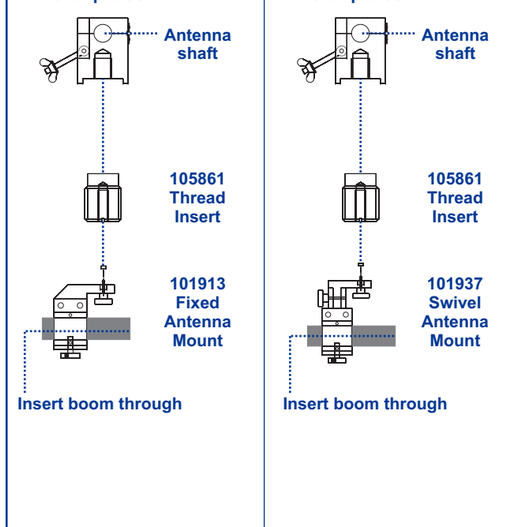


Can mount directly to a 4-TR. Use of a 102308 Swivel Antenna Mount simplifies polarization, and is optional.

7-TR, Mast



2x2 Boom



Mini-Bicon Antennas

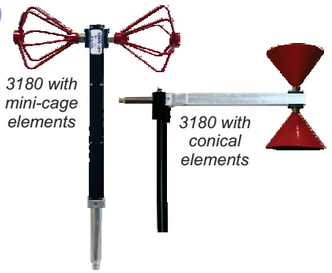
3181, 3183, 3184

3181, 3184

3183

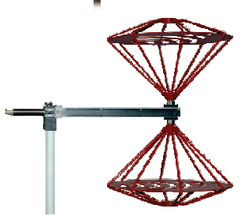
3180, 3182

3180



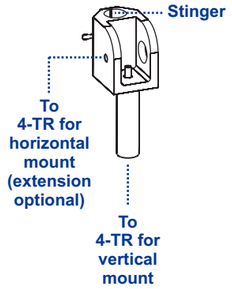
3180B

3182



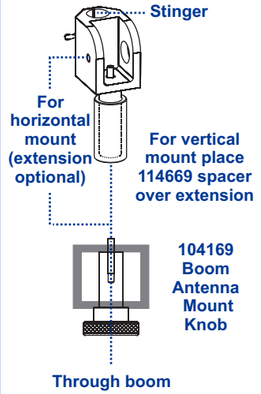
4-TR

113956 Antenna Mount Assembly



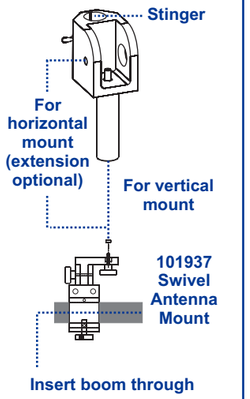
7-TR, Mast

113956 Antenna Mount Assembly


Stinger
For horizontal mount (extension optional)
For vertical mount place 114669 spacer over extension
104169 Boom Antenna Mount Knob
Through boom

2x2 Boom

113956 Antenna Mount Assembly



About Mounts for 3181/3183/3184

3181, 3183, and 3184 ship with 113956 Antenna Mount Assembly, which includes the 114669 Spacer; no additional hardware required to mount to 4-TR

Standard Parts

3180, 3180B, and 3182 ship with these standard parts:

- 100733 Support Rod
- 101942B Support Base
- 102108 Clamp Block

Stinger Mounts

3181, 3183, 3184

- ***4-TR*** – See *About Mounts for 3181/3183/3184*
- ***7-TR, Mast, 2x2 Boom*** – Additional hardware required

3180, 3180B, 3182

- ***4-TR / 7-TR*** – Mounts directly to a 4-TR or 7-TR without additional hardware
- ***Mast*** – Additional hardware required

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

4-TR

102108 Clamp Block — Stinger — 100733 Support Rod — 101942B Support Base — To 4-TR

OR

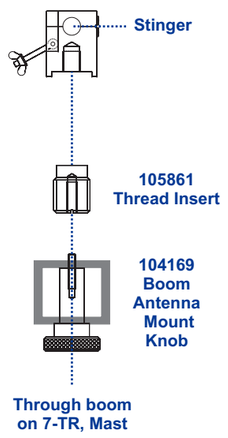
102108 Clamp Block — Stinger — 102308 Swivel Antenna Mount — To 4-TR

Can mount directly to a 4-TR. Use of a 102308 Swivel Antenna Mount simplifies polarization, and is optional.

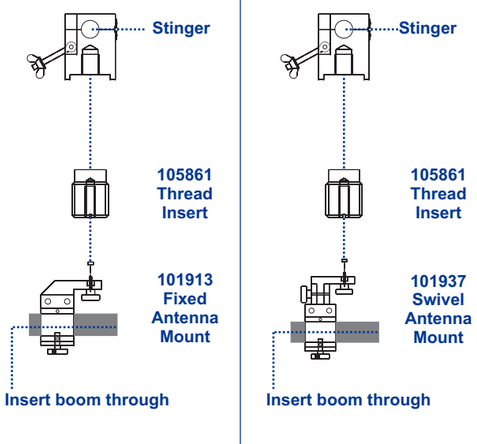
OR

102108 Clamp Block — Stinger — 105861 Thread Insert — To 4-TR

7-TR, Mast



2x2 Boom



Log Periodic Antennas

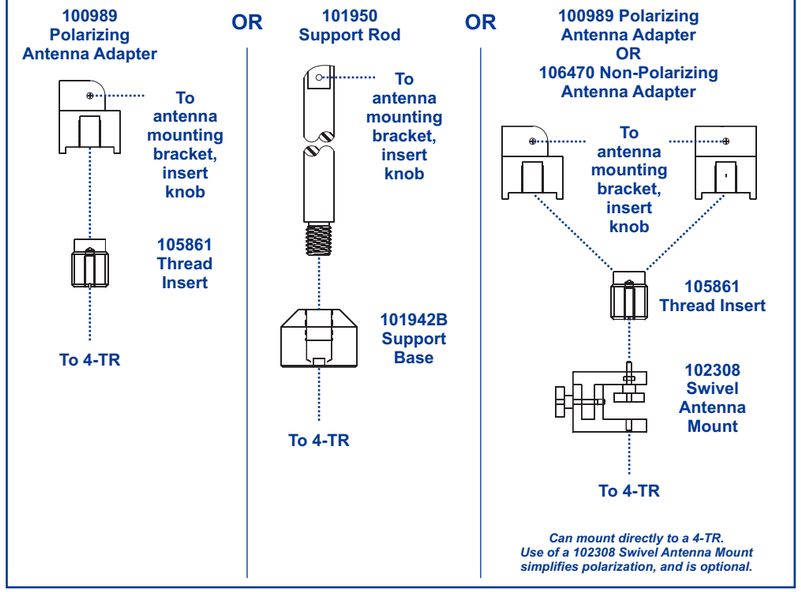
3148B

3148, 3147, 3144

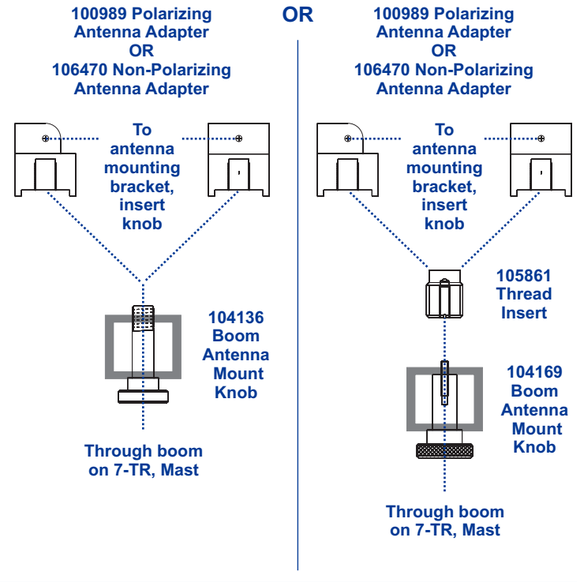
3148

3147

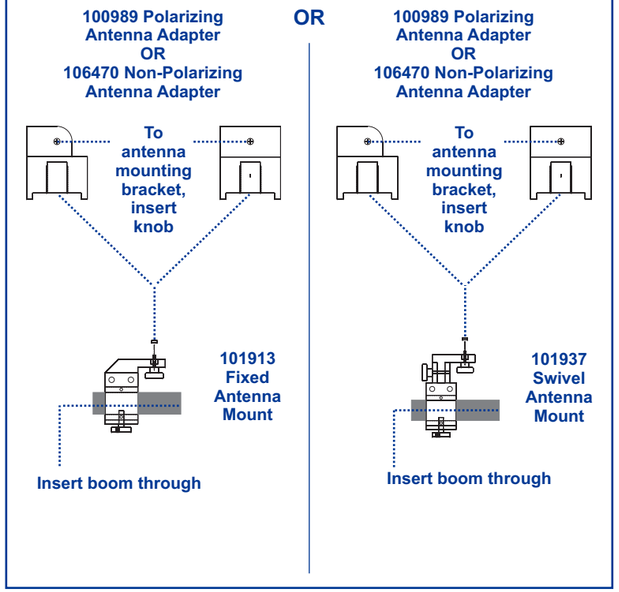
4-TR


100989 Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
105861 Thread Insert
To 4-TR
OR
101950 Support Rod
To antenna mounting bracket, insert knob
101942B Support Base
To 4-TR
OR
100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
105861 Thread Insert
102308 Swivel Antenna Mount
To 4-TR
Can mount directly to a 4-TR. Use of a 102308 Swivel Antenna Mount simplifies polarization, and is optional.

7-TR, Mast


100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
104136 Boom Antenna Mount Knob
Through boom on 7-TR, Mast
OR
100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
105861 Thread Insert
104169 Boom Antenna Mount Knob
Through boom on 7-TR, Mast

2x2 Boom


100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
101913 Fixed Antenna Mount
Insert boom through
OR
100989 Polarizing Antenna Adapter OR 106470 Non-Polarizing Antenna Adapter
To antenna mounting bracket, insert knob
101937 Swivel Antenna Mount
Insert boom through

Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

Antennas shown here ship with these standard parts:

- 105861 Thread Insert
- 100989 Polarizing Antenna Adapter
- Antennas include mounting bracket (attached) and mounting knob(s)

Notes

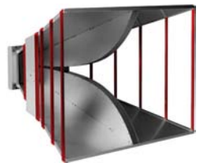
- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

Mounting the Model 3186

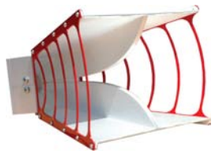
For complete information on mounting the Model 3186, see the *Model 3186 Dual Stacked Log Periodic Dipole Array (LPDA) User Manual*.

Double-Ridged Waveguide Horns

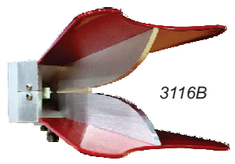
3106B

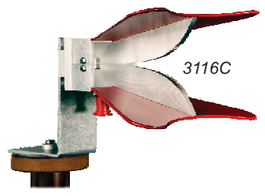


3115



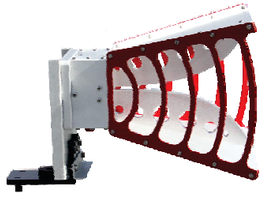
3116, 3116B, 3116C





3117

3119

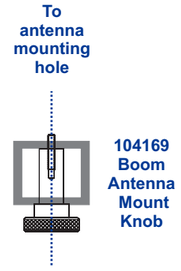


4-TR

Do not mount the 3106 Series or 3119 to a 4-TR.

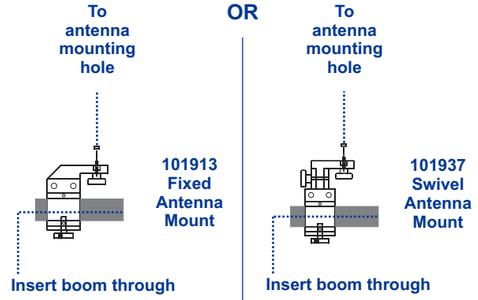
All Double-Ridged Waveguide Horns (except the 3106 Series and 3119) mount directly to a 4-TR. Mounting hardware is included; no additional hardware required.

7-TR, Mast



See Mount 3106B to 108507 Boom for the steps to mount a 3106 Series antenna to a 7-TR.

2x2 Boom



Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

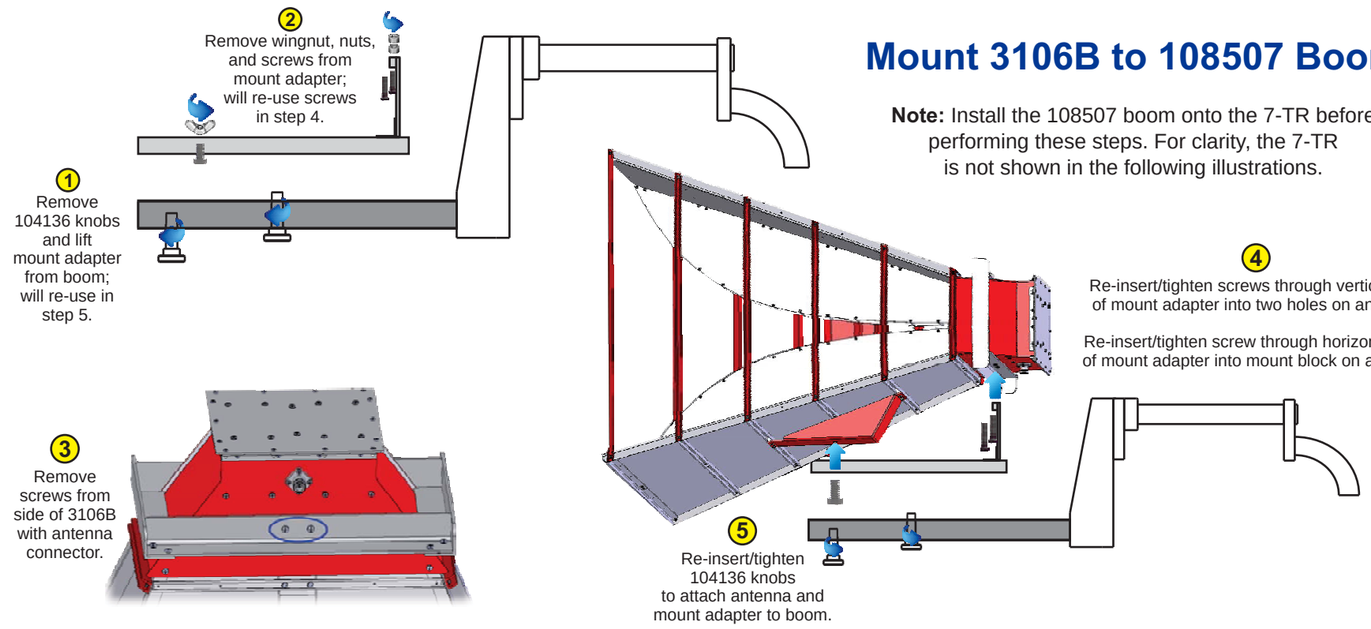
- ***Mast*** – Additional hardware required to mount to a mast

Notes

- ***7-TR*** refers to these booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
  - (for 3106 Series only) ***108507*** – centerline rotation boom; when changing polarization, maintains centerline rotation
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

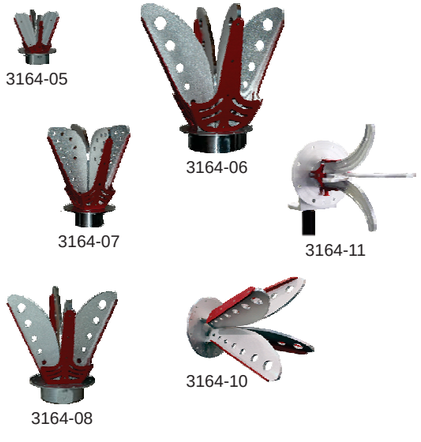
Mount 3106B to 108507 Boom

Note: Install the 108507 boom onto the 7-TR before performing these steps. For clarity, the 7-TR is not shown in the following illustrations.


2
Remove wingnut, nuts, and screws from mount adapter; will re-use screws in step 4.
1
Remove 104136 knobs and lift mount adapter from boom; will re-use in step 5.
3
Remove screws from side of 3106B with antenna connector.
4
Re-insert/tighten screws through vertical part of mount adapter into two holes on antenna.
Re-insert/tighten screw through horizontal part of mount adapter into mount block on antenna.
5
Re-insert/tighten 104136 knobs to attach antenna and mount adapter to boom.

3164 Series Horns

Open Boundary Quad-Ridged Horns
3164-05, -06, -07, -08, -10, -11



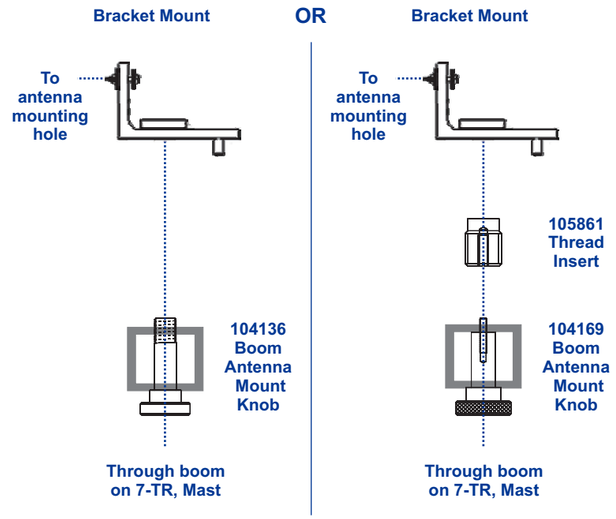
4-TR

Only the 3164-05 (108071 bracket) and 3164-11 (119430 bracket) can be mounted to a 4-TR.

Do not mount 3164-06, -07, -08, or -10 antennas to a 4-TR.

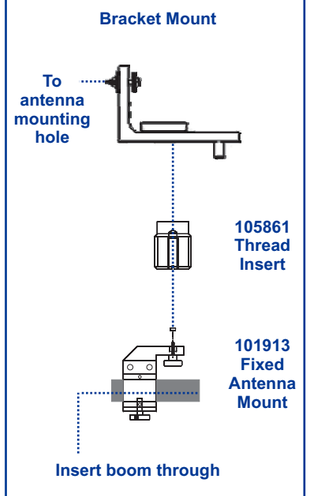
*See **About 3164 Mounts**.*

7-TR, Mast



*For the type of bracket mount, see **Standard Parts**.*

2x2 Boom



*For the type of bracket mount, see **Standard Parts**.*

Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

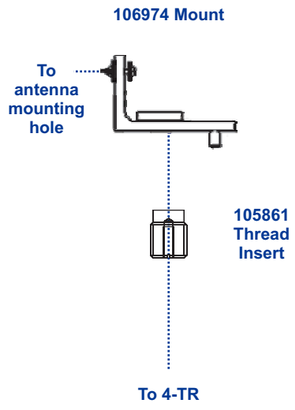
- **108071 Mount** – ships with 3164-05
- **106974 Mount** – ships with 3164-06, 3164-07, 3164-08, and 3164-10
- **119430 Mount** – ships with 3164-11
- **105861 Thread Insert** – ships with 3164-08 and 3164-10

Notes

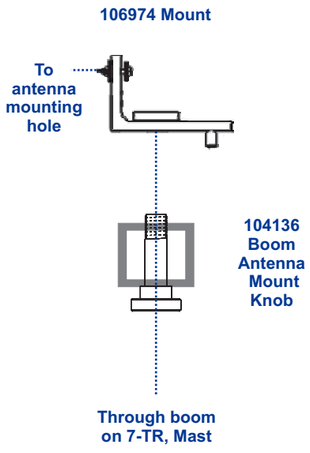
- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

Dual-Polarized Horns
3164-03, -04

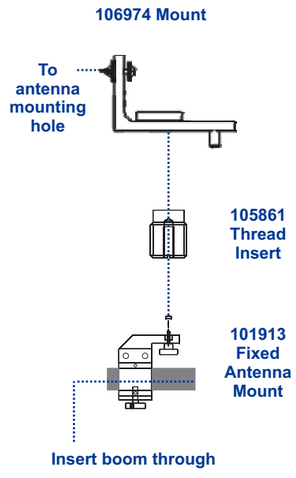
4-TR



7-TR, Mast



2x2 Boom

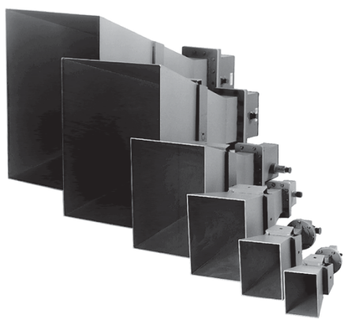


About 3164 Mounts

- **3164-05** – ships with stinger for stinger-compatible mounts
- **3164-05, -11** – ships with mounting hardware, no additional hardware required to mount to 4-TR, 7-TR, mast, or 2x2 boom

Pyramidal Horn Antennas

3160 Series, 3161 Series



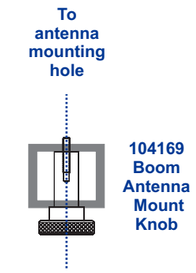
4-TR

Pyramidal horn antennas mount directly to a 4-TR; no additional hardware required.

Do not mount 3160-01, 3160-02, and 3161-01 antennas to a 4-TR.

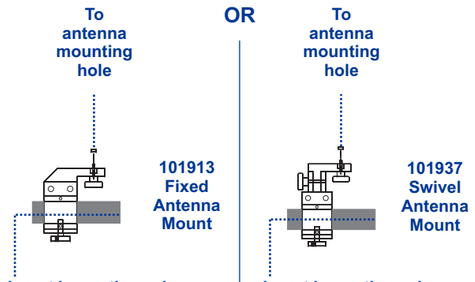
*See **About 3160 Mounts**.*

7-TR, Mast



*See **About 3160 Mounts**.*

2x2 Boom



*See **About 3160 Mounts**.*

About 3160 Mounts

- **3160-09** and **3160-10** – ship with a supplemental mount that may be used with the 4-TR, 7-TR, mast, and 2x2 boom

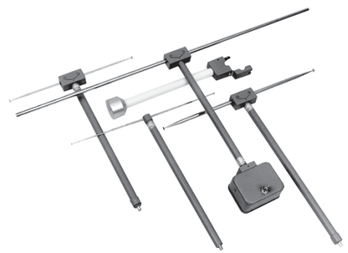
Notes

- ***4-TR*:** Do not mount large pyramidal horn antennas to a 4-TR.
- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

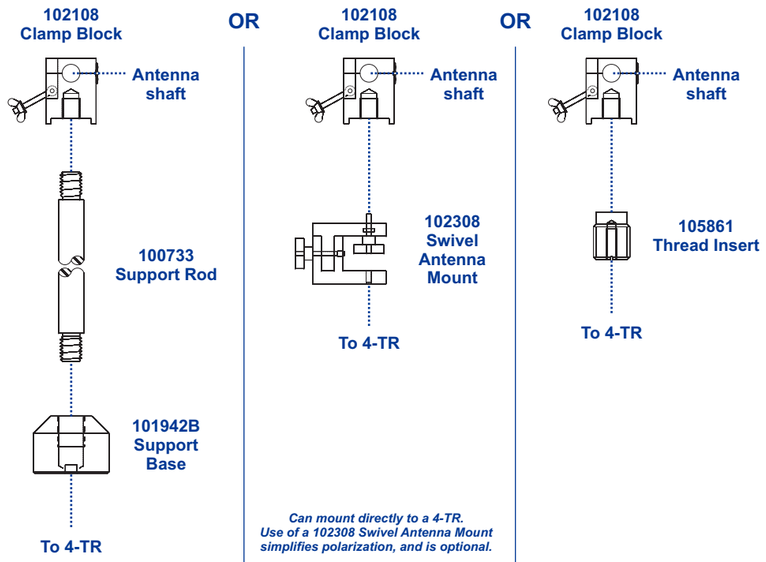
Dipoles

3121D

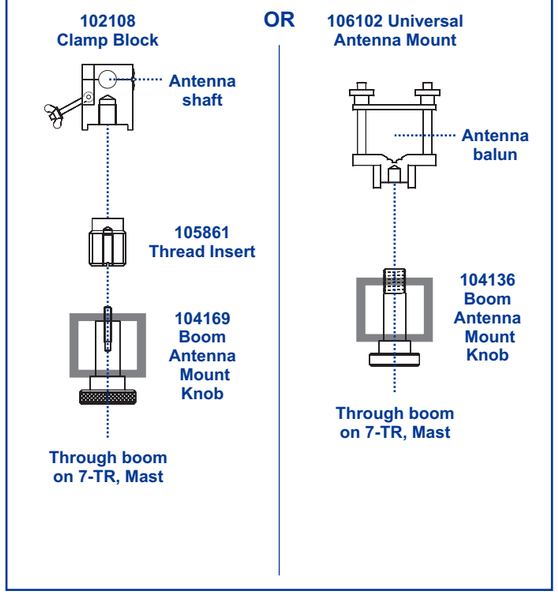
3121C



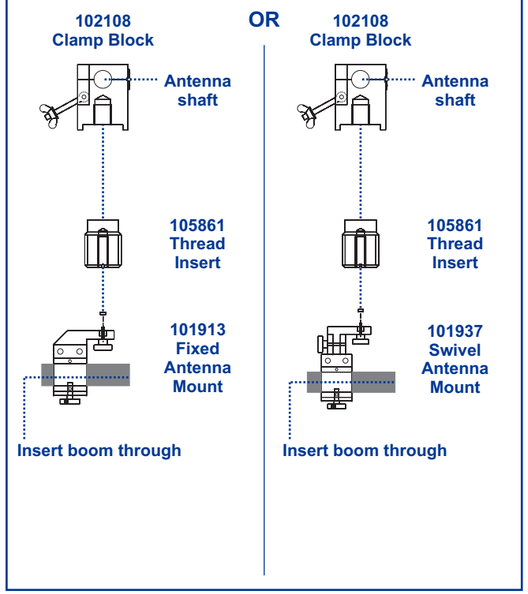
4-TR



7-TR, Mast



2x2 Boom



Stinger Mounts

- ***4-TR*** – Do not mount to a 4-TR
- ***7-TR*** – Mounts directly to a 7-TR without additional hardware

- ***Mast*** – Additional hardware required to mount to a mast

Standard Parts

Antennas shown here ship with these antenna adapters:

- 100733 Support Rod
- 101942B Support Base
- 102108 Clamp Block

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

Loop Antennas and Rod Antennas

Loop Antennas

Rod Antennas

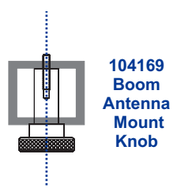
3301C

4-TR

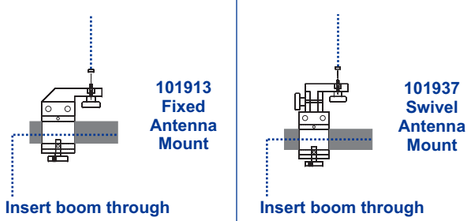
Loop antennas and rod antennas mount directly to a 4-TR; no additional hardware required.

*See **About 3301C**.*

7-TR, Mast



2x2 Boom



About 3301C

- **4-TR Light Tripod** – To comply with the MIL-STD-461F standard, a smaller tripod (4-TR,1ML) is available (optional).
- **MIL-STD-461F Kit** – To comply with the standard, a cable and grounding kit (113359) is included with the 3301C.

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

Conical Log Spirals

3101

3102

3103

4-TR	7-TR, Mast	2x2 Boom
Conical log spirals mount directly to a 4-TR; no additional hardware required.	*Conical log spirals mount directly to a 7-TR. Mounting hardware is included; no additional hardware required.*	*Conical log spirals not intended for 2x2 boom.*

Standard Parts

- **101942B Support Base** – ships with 3101, 3102, and 3103
- **101941 Support Rod** – ships with 3101
- **101943B Support Rod** – ships with 3102
- **101944 Support Rod** – ships with 3103

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems

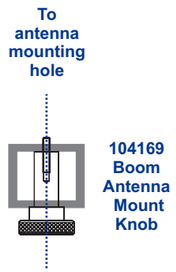
High Gain Conical Horns

3163 Series
-03, -04, -05, -06

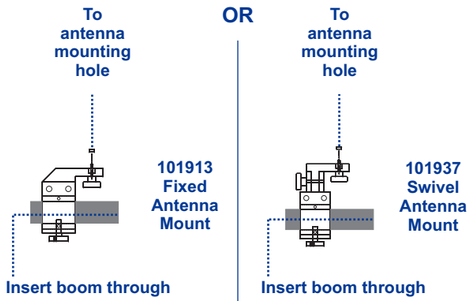
4-TR

Model 3163 Series horn antennas mount directly to a 4-TR; no additional hardware required.

7-TR, Mast



2x2 Boom



About 3163 Series

- Each Model 3163 Series includes a built-in 1/4–20 thread mount.
- The backplate on each Model 3163 Series provides threaded holes for mounting directly into the feed section of a tapered chamber. Additionally, you can use the threaded holes to create your own custom mounting solution. See the 3163 manual for a diagram of each backplate.

Notes

- ***7-TR*** refers to 109042, 108983, and 118947 booms:
  - ***109042*** – straight; for general antenna mounting on a 7-TR
  - ***108983*** – offset; for general antenna mounting on a 7-TR with pneumatic or manual polarization; can also be used to mount stinger-type antennas
  - ***118947*** – for stinger-type antennas only
- ***Mast*** refers to 2070 Series, 2075, and 2175 Antenna Towers
- ***2x2 Boom*** refers to a typical 2-inch by 2-inch boom; non-ETS-Lindgren and previous generation EMCO positioning systems